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MAINTAINING OPTIMAL NUTRITION AND ENERGY BALANCE FOR BASKETBALL PLAYERS

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Abstract
Basketball is a sport that requires a high level of physical activity, and proper nutrition is essential for improving athletes' performance and preventing injuries. This article provides a comprehensive analysis of the principles of optimal nutrition for basketball players, strategies for maintaining energy balance, and the importance of macro and micronutrients in increasing physical fitness. In addition, the effects of meals taken before and after training and competition on the body, the importance of fluid balance, and electrolytes are also studied. The study offers practical recommendations for optimizing the energy balance of basketball players, based on the scientific foundations of modern sports nutrition.

Keywords: Basketball, sports nutrition, energy balance, macronutrients, micronutrients, carbohydrates, proteins, fats, dehydration, electrolytes.

Introduction

Nutritional Principles and Energy Balance Strategies for Basketball Players

Basketball is a physically demanding sport that requires endurance, explosive power, speed, and coordination. The physical activity level of basketball players remains high throughout the game, which results in substantial energy expenditure. Therefore, proper nutrition and the maintenance of energy balance have a direct impact on athletes' physical readiness, performance, and overall health.

An optimal nutritional strategy for basketball players encompasses three key aspects: adequate energy supply, muscle recovery, and support for the immune

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system. Maintaining energy balance enhances the efficiency of training and contributes to the optimal function of muscles. In addition, preventing dehydration and deficiencies in micronutrients is of great importance. This article provides a detailed overview of nutritional principles and methods for maintaining energy balance tailored to the needs of basketball players.

1. The Importance of Energy and Maintaining Balance

Given the high daily energy expenditure of basketball players, their nutritional regimen should be designed to prevent energy deficits. The majority of daily caloric intake should come from carbohydrates, which serve as the primary source of quick energy. Proteins aid in muscle recovery, while fats play an essential role in providing long-term energy and supporting hormonal balance.

- **Carbohydrates:** Necessary for maintaining glycogen stores in the muscles and providing energy. Recommended sources: whole grains, fruits, vegetables, legumes.
- **Proteins:** Essential for muscle tissue repair and growth. Recommended sources: chicken, fish, eggs, dairy products, legumes.
- **Fats:** Important for long-term energy reserves and anti-inflammatory effects. Recommended sources: nuts, avocado, olive oil.

2. Pre-Workout and Pre-Competition Nutrition

Foods consumed before training or competition provide athletes with sustained energy and enhance endurance. The following principles are recommended for optimal pre-performance nutrition:

- Consume a high-carbohydrate and moderate-protein meal 2–3 hours before the game.
- Avoid excessive intake of high-fat and high-fiber foods, as they may slow down digestion.
- Drink adequate fluids in advance to maintain proper hydration levels.

3. Post-Workout and Post-Competition Recovery Nutrition

To accelerate muscle recovery and replenish energy stores after workouts or competitions, athletes should consume the following:

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- **Proteins:** Crucial for muscle repair and reinforcement.
- **Carbohydrates:** Assist in the replenishment of glycogen stores.
- **Electrolytes and water:** Essential for restoring minerals lost through sweat.

Recommended post-activity meals include chicken with rice, smoothies, yogurt with banana and nut butter, and fish with vegetables.

Additionally, sufficient intake of vitamins and minerals is vital for the healthy development of bones and muscles. In particular, vitamin D, calcium, and magnesium play a significant role in muscle contraction and bone strength.

4. Hydration and Dehydration Prevention

Dehydration can negatively affect athletic performance. To maintain hydration, the following guidelines are suggested:

- Drink at least 2–3 liters of water throughout the day.
- Consume 200–300 ml of water every 15–20 minutes during training or competition.
- Use sports drinks to restore electrolyte balance.

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